

City profile: Thimphu

By: [Susan M. Walcott](#)

Walcot, S. (2009) "City Profile: Thimphu". *Cities* 26:158-170.

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Abstract:

The only capital city in the world without a traffic light, Thimphu is currently in the throes of major building projects as Bhutan modernizes with a new parliamentary monarchy and an increasingly open economy. The Thimphu Structural Plan adopted in 2002 provides a blueprint to guide the city in its transition from isolation to global participant. This analysis utilizes recent data from the first accurate census, updated GIS maps, and observations from several trips to assess Thimphu's development stage and strategy. The urban landscape and plans being implemented reflect Bhutan's commitment to combine traditional elements such as sacred and secular architecture and community-promoting village clusters along with adequate public transportation and price-supported housing, internet cafes and e-governance. The "Four Pillars of Gross National Happiness" (preserving culture and the environment, sustainable economy, and clean government) shape the urban setting. Thimphu serves as the capital city, site of political and economic power, and indicator of future directions for a strategically located Himalayan country.

Keywords: Thimphu, Bhutan, Modernizing, Transition

Article:

Introduction

The tiny Himalayan country of Bhutan attracts attention disproportionate to its size for several persuasive reasons. Strategically Bhutan balances in a hinge location between the two Asian giants of India and China, "peacefully rising" (in the words of Chinese official policy) on either side of the Himalayas (Fig. 1). Developments in such buffer/shatter belt regions holds great potential for other large global players (Leinbach, 1995; Potter et al., 2004). Culturally Bhutan seeks to follow the "Middle Way" precepts of the Vajrayana Buddhism it alone preserves, between the belief system's source locations in India and Tibet where it has waned. A central Buddhist concept, the Middle Way refers to the Buddha's advocacy of living in a manner that avoided extremes of indulgence or asceticism (Smith and Novak, 2003). In the religious context it can also refer to a path for attaining knowledge by direct experience as a way to resolve disputes. Its use in this article draws on Bhutan's Buddhist roots as applied to ongoing attempts to find its own way to a suitable modernization, balancing both its historical culture forged largely in isolation with the types of behaviors and structures observed in countries classified as developed.

Bhutan seeks to retain crucial elements of its past while care-fully moving into modernization by forging new technological, political and economic linkages (Stephenson, 1994; Pommeret, 2006). The capital city of Thimphu provides evidence of Bhutan's historic evolution and serves as a harbinger for its future direction. With a population of 79,185, Thimphu's next largest rivals are Phuentsholing (20,537) on the southwest border, Wangdue Phodrang (6,714) to the east of the capital, Mongar (6,612) in the central east, and Samdrupjongkhar (5,952) on the southeastern border with India (OCC, RGoB, 2006). Both the census figures and the maps used in this city profile are new and indicative of Bhutan's transition stage. A major demographic change from the previous 1988 census lies in the decrease in the proportion of ethnic Nepali (Lhotshampa) population from its high point of 45%. Seeking to avoid Sikkim's situation where the formerly dominant demographic was swamped by ethnic Nepali immigrants, the Bhutanese passed laws in the late 1980s restricting citizenship to pre-1958 residents. This sparked riots in 1990, leading to widespread expulsions by the end of the year

(UNHCR, 2006). According to Bhutanese authorities, the 2005 Census of Bhutan came from a total country-wide count, one of only two nations in the world to do so. Some outside observers question the low number of non-ethnic Dzongka Bhutanese, based on observations in border towns such as Phuentsholing. Previous population estimates varied widely, and provide an inaccurate basis for tracing growth before the current base numbers.

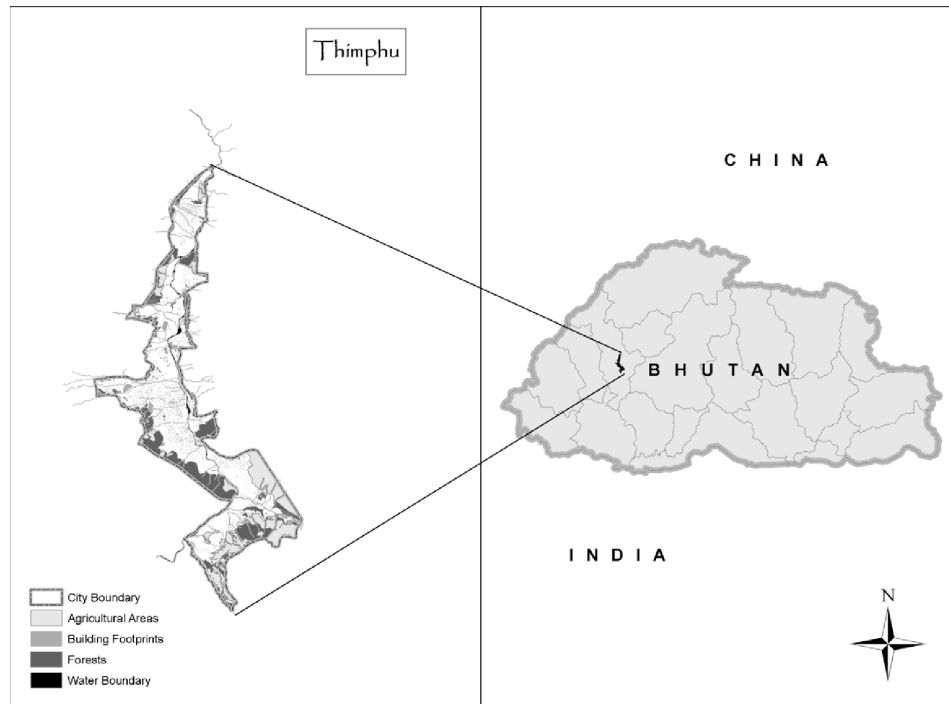


Fig. 1. Study area: regional setting of Bhutan, location of Thimphu.

Bhutan's extremely steep topography dictated Thimphu's location. Major cities occupy the few relatively broad river valleys permitting easy access to water. The country's sole airport, serving its national fleet of two airplanes, sits on the outskirts of the city of Paro, 60 km (37 miles) to the west of Thimphu. A newly broadened roadway reduced the winding connection between airport and capital city to 45 min along precipitous mountain edges. The major commercial city of Phuentsoling perches as the primary sanctioned crossing on the Indian border, some 179 km (111 miles) and 5 h to the southwest of the capital. The main branch of the country's sole National University sits in the isolated east Bhutan town of Kanglung, close to that region's major city of Trashigang. Thimphu serves primarily as the seat of government, a bureaucratic employer of choice for most Bhutanese, and therefore the site of urban amenities related to the highest incomes and aspirations: retail, services, education and entertainment. Thimphu's population represents 40% of the country's urban population, with roughly half of its employed residents working in the government bureaucracy. Reflecting the national dress style required of Bhutanese citizens, these jobs are referred to as "white sleeve" rather than "white collar", but clearly separate out the educated elite.

A typology of urbanization stages in developing countries typically finds urbanization increasing over time, but slowing from the most rapid early rate. The common practice of extending municipal boundaries swells the rolls of urban population by over-bounding to encompass outlying nearby villages. The usual process of in-migration adds to the natural increase rate, further accelerating the rise in urban population level. Information on sending areas and motivations for migrations is often quite limited, but important for understanding spatial aspects of development trends in peripheral regions of the world (Grant and Short, 2002). In Thimphu, a predominance of male migrants speaks to the lack of manufacturing jobs, which otherwise often attract female migrants disproportionately (Ness and Talwar, 2005). Given the rural roots of much of Bhutan's leadership, the country's early stage of urbanization and the conscious attempt to preserve traditional values, Thimphu both confirms and contrasts with the general picture of Third World urban transition.

This profile analyzes Thimphu's role in guiding and evidencing Bhutan's emergence as a developing country. After presenting the basic geographic facts characterizing Thimphu's physical setting, examination of the city's historical evolution follows. The political, socio-economic and demographic forces behind this phenomenon are next delineated. Discussion of current modernization plans that are reshaping the landscape in multiple respects includes constraints and opportunities. Prospects for Thimphu's "Middle Way" future development follow in a summary conclusion.

The maps come from work done under the author's direction, utilizing a 2006 QuickBird image to update previous maps based on a remote sensing image from 1995. Use of Geographic Information Systems to assist with urban planning is at a very early stage (Skov-Petersen, 1997; Drukpa and Penjor, 2007).

Geographical setting

Befitting its role as the capital of a small Himalayan country, Thimphu stretches along the banks of the Wangchu river ("chu" means "river" in the national language, Dzongkha) at an average elevation of 7700 to 8000 feet. The city is generally located at 27 29N latitude and 89 36E longitude. Most of the city occupies the left side of the Wangchu, with the main market and some small industries such as wood working shops on the right side. Elevations rise steeply, with monasteries, some hotels, and homes of wealthier, politically well-connected residents higher up. The city limits to the east and west run roughly halfway up the surrounding hillsides. They are marked by narrow roads on each side and, beyond, a sharp decrease in building density (Fig. 2). Temperatures range from a winter low of 27 F (-2.6°C) at night to 54 F (12.3°C) during the day, to a summer high of 89.6 F (32°C) and 71 F (21.6°C) at night, moderate for a Bhutanese city. Thimphu escapes the brunt of the May–June monsoon felt in the southern plains of Bhutan, with rain falling largely in the evening or late in the day.



Fig. 2. Prayer flags over Thimphu valley, city center Thimphu land use.

Land use pattern

An examination of Thimphu land use patterns (Fig. 1) indicates the prevalence of agricultural land in the lower eastern sectors, with forested land in the higher western areas and metropolitan borders. Religious structures serve important memorial functions in the city core and outlying areas, from monasteries perched on steep valley hillsides to *chortens* (small memorial towers, also known as *stupas*) at auspicious sites throughout the valley. Massive *dzongs* ("forts") remain as remnants of medieval Bhutan and continue in some cases as centers of political, military, and religious organizations (Rutland, 1999). The king and chief abbot still work from

quarters in Thimphu's Tashichodzong, which constitutes the ceremonial center of the city along with particular *chortens* such as the large memorial to the third king (Fig. 3).

Building clusters, classified in a later map, clump in traditional village associations on either end of the elongated city. Several of the 16 area divisions within the expanded Thimphu city boundary are referred to in the Thimphu Structural Plan (TSP) as "urban villages" in consideration of their recent status as historically separate villages. Current districts subsumed in modern Thimphu preserve the names and locations of these villages such as Dechenchoeling in the north and Simtokha in the south. The central core and upscale residential section of Motithang contain many newer retail and residential structures, with design elements mandated to retain elements of classical Bhutanese style in height, decorative trim, and often street level wooden frame work (Fig. 4). As the government bureaucracy grows and departments split into their own individual buildings, the attempt to combine traditional (divergent) and recognizably modern (convergent) elements mix in interestingly crossvergent fashion, including features from its cultural history and modern adaptations. The newly completed Department of Education building, for example, combines a front façade of blue glass and brick with traditional window shape treatments and a high pitched roof form derived from traditional rural building where it was used for air drying agricultural products (Fig. 5). Structures in outlying village sections of the city remain traditional in look and function. Downscale Changzamtog contains transient *bagos* (temporary housing), while outlying Lungtempu harbors a large military installation. Uniformed force facilities are also found in Dechenchoeling at the northern tip of Thimphu, as well as in a large area slated for relocation from the central core.



Fig. 3. Tashichodzong, with river front, hill behind.

Vegetation

Agricultural fields shift from barley greening in the winter to rice growing in the summer. Due to conditions of low temperature at high elevations, Bhutan's rice is predominantly a distinctive red color. The city of Paro in the broadest valley produces the highest yield of red rice, followed by Thimphu. A picture of Thimphu's main government building, the Tashichodzong, taken in the early 1960s after the city's designation as the country's capital in 1952, shows a large traditional structure completed surrounded by trees and rice fields on the banks of a winding river (Karan, 1967). The municipal market offers a variety of produce grown locally, particularly the omnipresent red chilis that join cheese in the national dish of *ema datsi*. Popular additions are potatoes (*kawa datsi*) or a species of mushrooms (*shamu datsi*) that grown under pine trees. Despite the Buddhist prohibition against the taking of life and the espoused virtue of vegetarianism, the consumption of yak, pork, and chicken meat as well as fish is popular. Apples grow on hillsides around the city. The government encourages their

cultivation for export as well as domestic consumption, including as a replacement for red rice cultivation since it is less expensive to import Indian white rice and grow niche export fruit instead.

Vegetation includes both riparian and marshland in addition to the paddy fields. The latter are protected from development under current land use regulations. Environmental conservation laws decree that forest cover in Bhutan not drop below 65–70% (RGoB, 1999). Thimphu lies in the temperate zone, dominated by Bhutan's best example of blue pine forest. Higher altitudes above Thimphu valley support a mixture of spruce, oak, pine and poplar. Wildlife in the hills surrounding Thimphu includes bear and leopard, snipes, woodcock, and crane varieties. Marshlands support duck, goose, Himalayan and common Kingfisher, lapwing and piper varieties, and bronze-winged jacana. The *takin*, Bhutan's rare "national animal" that resembles a small bison, finds shelter in a reserve on the city outskirts (TSP, 2005, from National Environmental Commission, Nature Conservation Division, Ministry of Agriculture, and Royal Society for Protection of Nature). According to the Ministry of Agriculture (MoWHS, 2005), Thimphu's forest cover accounted for 56% of land cover, followed by pasture at 17%, agriculture at almost 2% and settlement occupying only .54%, based on analysis of remotely sensed images.



Fig. 4. Construction on Norzim Lam, the main street of downtown Thimphu.

Historical evolution

Bhutanese villages can consist of as few as a handful of traditional two to three story cottages, sturdily built to withstand severe winter weather. Denser clusters of settlement occur around a *dzong*, an archetypically Bhutanese combination of fort and monastery. Bhutan's founding unifier, Shabdrung Ngawang Namgyal, established the first *dzong* in the early 1600s at Simtokha on the outskirts of what is now an incorporated periphery of Thimphu. The Shabdrung was well advised to do so, having escaped as a powerful *lama* on the run from northern neighbor Tibet. He carried a religious relict giving him prestige in his land of refuge but drawing the armed wrath of the Tibetans. The decisive battle occurred at Punaka *dzong*, some 77 km east of present day Thimphu. Bhutanese annually commemorate their victory over the numerically superior Tibetans with a large annual festival (*tsechu*) that underscores the utility of these secular-religious medieval type structures. Until the country was unified in 1907 under Ugyen Wangchuck, at that time the strongman of the Bumthang/Tongsa region in central Bhutan, different valleys were ruled by their own governor, or *penlop*. Such divisions formed the basis of the current provincial *dzongkhags*. Civil war followed Shabdrung's demise, spilling over into invasions of Sikkim in the 1770s. The Treaty of Cooch Behar (1774) and the Treaty of Sinchula (1865) consolidated British India's control of Bhutan's former southern lowland plains (Singh, 1988).

Ugyen Wangchuck's ultimate triumph over his pro-Tibetan rival the Penlop of Paro lay in strategically allying himself with the British occupiers of India, in one of the latter's many moves to expand their colonial interest. The India–Bhutan Treaty of Friendship in 1949 cemented independent India's inheritance of Britain's concern to preserve Bhutan as a buffer to expansionist China in the north (Karan, 1967, [Rose, 1977](#)). India's official boundary with Bhutan was confirmed by treaty only in 2006 ([Wangchuk, 2006](#)). In 1952 Ugyen Wangchuck's grandson, King Jigme Dorji Wangchuck, moved the capital to Thimphu, roughly halfway between traditional warlord strongholds in Paro to the west (now site of the only airport due to its unusually long flat valley) and Punakha, almost equidistant to the east, and the even more easterly stronghold of Monggar, one of the largest towns in eastern Bhutan. The steep mountainous terrain permitted only small, widely scattered settlements interspersed with a few larger areas in the southern part of the country.

This type of settlement landscape inhibited the growth of a national identity beyond allegiance to a charismatic and powerful single figure. The third king consciously worked however to create institutions of statehood, with power centered in the new capital of Thimphu. The tradition of a shared government with the religious and secular heads was made visible in the layout of Tashichodzong. The two parts of government split use of the structure, around a central open area. His son King Jigme Singye Wangchuck started the constitution revision process that legally separates the functions of the two sides, though the heads of each body continue to work in the same extensive building.

As part of closer ties mutually sought by the Bhutanese and Indian government following China's invasion and consolidation of control over Tibet in 1959, the capital city of Thimphu underwent a building boom in the 1960s fueled by Indian funding. The main thousand acre site for the city, corresponding roughly to the area of the present central town (the downtown Core City, upper and lower Motithang, Changzamtog and Hejo-Langjophaka), was divided into areas for residences, a retail service strip, schools, a modern hospital and a traditional medicine center, according to earlier British planning practices still prevalent in post-colonial India. Engineers installed a small hydroelectric facility at the edge of the city to supply its needs, a type of mini-dam with minimal environmental impact which became Bhutan's typical pattern for electricity provision ([Karan, 1967](#)). Construction in Thimphu continues unabated to furnish facilities for the relatively wealthy government employees and business class attracted to the most modern urban center of the country ([Pommeret, 2006](#)). The new constitutional monarchy format led to construction of numerous separate buildings for new or enlarged government functions such as the parliament and Supreme Court building. Houses for the new parliamentarians sit on a hillside area in the upper class section of town, close to living quarters for the fourth king's four queens and queen mother. Thimphu's streets, which support the majority of all vehicles in the country, are being widened, extended and paved in preparation for the coronation of the new king Jigme Khesar Namgyel Wangchuck in November 2008.

Socio-economic transition

By the year 2005 Thimphu's population included 79,185 residents, with slightly more than half female (81,300 females compared to 79,400 males), according to the Census of Bhutan ([MoWHS, 2005](#)). This diverges from the usual developing world pattern, perhaps indicating strong attempts to promote gender equity along with the tradition of female inheritance of property. Wards or districts in the central town, as defined in the preceding section, contain an estimated two thirds of the total population ([Fig. 6](#)).

Other metropolitan districts at the northern and southern ends of Thimphu incorporate villages within the overbounded city limits. Dechenchoeling on the northern tip is a particularly large settlement, and in the process of being relocated closer to the river and away from government owned land now shared with a military complex. The impetus for relocating areas such as this village, an auto repair shop cluster, and the practice of land pooling which forces owners to trade some land for other parcels, is to bring land use into compliance with the Thimphu Structural Plan ([MoWHS, 2005](#)). This document, discussed later in the article, sets out a Master Plan for municipally integrated development.



Fig. 5. Department of Education new building.

Thimphu's city core contains the highest concentration of residents, followed by the traditional northern villages of Taba and Jongshina. Mothithang comprises a higher end section, with incomes generally rising along with elevation. This area also contains several apartment complexes for government employees. The central section of Thimphu, as defined above, includes concentrations of police, army, Indian military and Bhutanese royal forces. Temporary residential shacks (*bagos*) of largely Indian workers can be found on steep outlying slopes and in the vicinity of construction sites where occupants work. These sheds are usually demolished upon detection if unauthorized – one way of discouraging migrant settlement and maintaining the planned layout of the city.

Occupations

Thimphu's economic pull is magnetic. Planning and guiding the implementation of government measures forms a major employment concentration. In Fig. 8 the "Other" category represents government employment, a highly prized berth for college graduates. Bhutan successfully retains its best and brightest by providing relatively comfortable employment along with the excitement of nation building. Thimphu's settlement pattern relates to its economic districts which display a clearly clustered pattern. A recently incorporated village to the east of Thimphu's core contains the main wood working huts. A large "Auto City" cluster currently within the central district is slated to move to a large area taking shape on the southern metropolitan outskirts where currently only an old village exists. This is an unpopular relocation for the workers. Subsidized rental housing and apartments under construction for them are close to the near-capacity sewer water treatment plant. Private apartment blocks offer a more attractive but expensive alternative to government housing which is in short supply. Development plans encourage entrepreneurial ventures in real estate as well as general business to supply dynamism and identify and fill underserved areas of the economy.

Largely subsistence agriculture and animal husbandry still employ over 60% of the workforce. Indicative of the country's recent leapfrog from a largely agricultural base to add an urban services component, the manufacturing sector plays a very small part in the economy, featuring handicraft and cottage industry at small scale. An almost *de rigueur* element in other developing countries, manufacturing commonly serves to employ

low skill rural immigrants and those with only a basic education. Barely half of Bhutan’s population is literate (OCC RGoB, 2007). But strong environmental concerns about pollution and lack of large tracts of available land for building factories cramp Thimphu’s ability to add a manufacturing component. The underdeveloped state of Bhutan’s roads, including the slowly improving single national highway, heighten shipping costs and exacerbate competition from low wage goods produced in neighboring India and China.

Economic strength lies in hydropower furnished by rural dams, tourism, and export of raw materials across the southern border with India for access to transport infrastructure and markets in that country. More than sixty percent of Bhutan’s economy depends on aid from India, with the balance largely sustained by inputs from donor organizations like the United Nations and the Asian Development Bank, along with projects conducted by small size countries such as Japan, Switzerland and Denmark. Despite model education, training, health and environmental protection programs, Bhutan ranks 133rd out of 177 nations on the UNDP human development index (hdrstats.undp.org 2008). Movement of the able, educated, and ambitious to advanced urban areas is an expected stage of development at present.

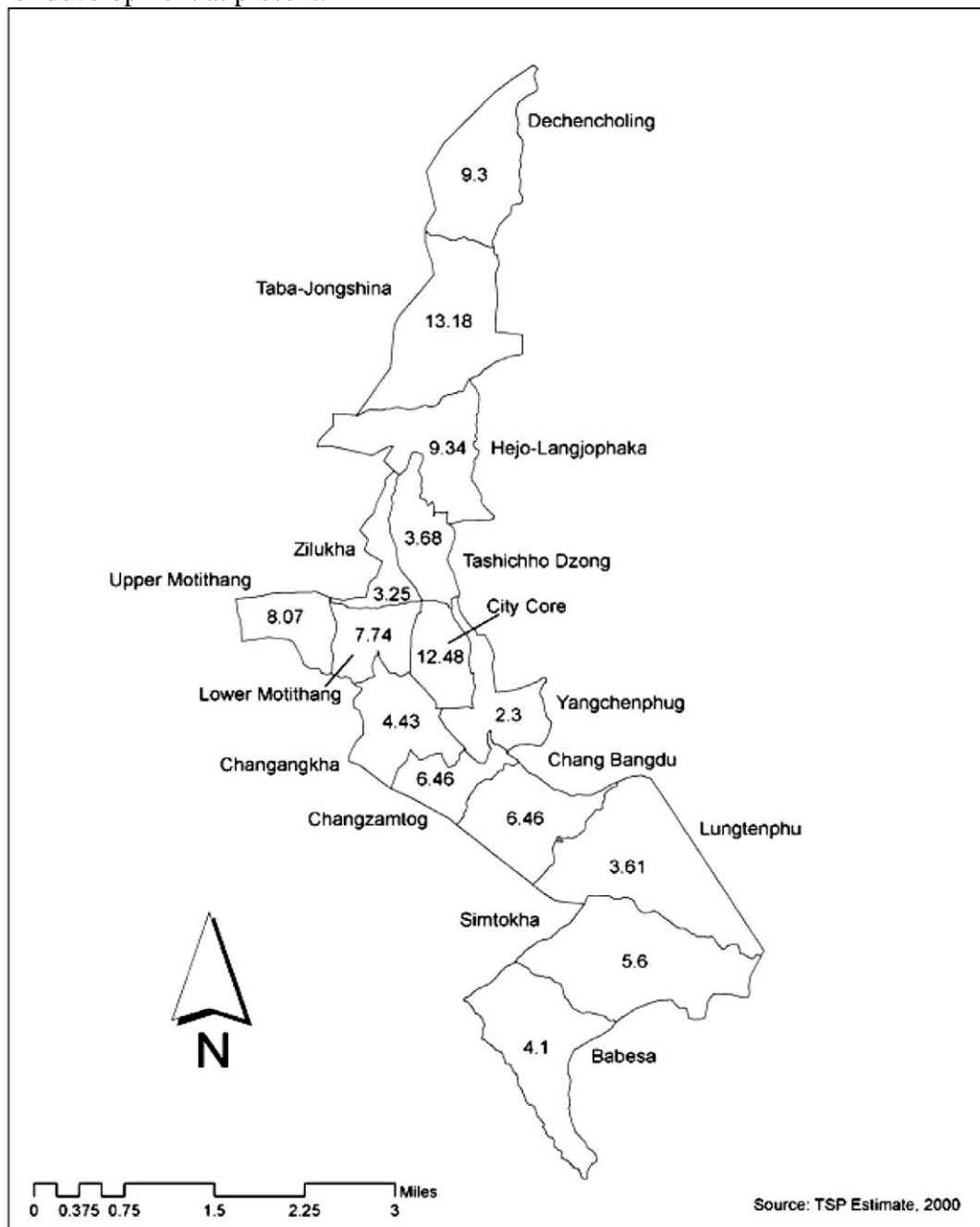


Fig. 6. Population in Thimphu Structural Plan districts.

Migration

Not surprisingly, Thimphu attracts both the highest absolute number and the highest proportion of migrants of any urban area in the country. The in-migration rate of 14.53% for Thimphu and 15.71% for Chhukha (Phuentsholing's province) indicates that both are major magnets. Figures available on a *dzongkag* level for 2005 revealed that 55% of Thimphu county's population of 98,676 (of which the city comprised by far the largest part) were migrants. In the face of the expected continued migration from rural areas, a top bureaucrat insisted that Thimphu would not experience peri-urban settlement nor allow "shanty towns" to develop. Instead, government policy aimed to abate reasons for migration (given as jobs and education) by improving conditions in the countryside (Rinzin et al., 2005). Schools to improve agriculture and animal husbandry, as well as training in technical and service occupations, are being established in rural areas. Improvements in basic infrastructure include extending roads and electricity to isolated hamlets, increasing their accessibility, and more widespread basic health care units.

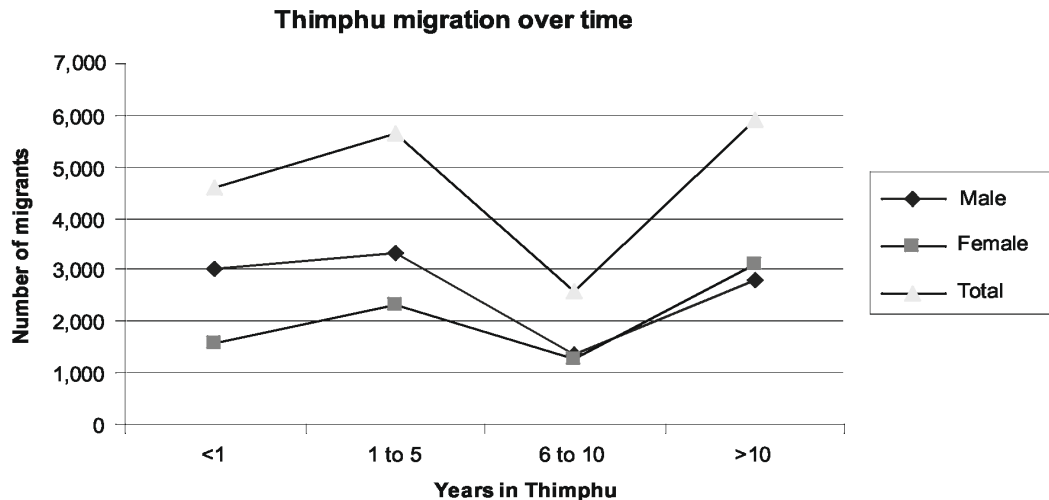


Fig. 7. Thimphu urban migration over time.

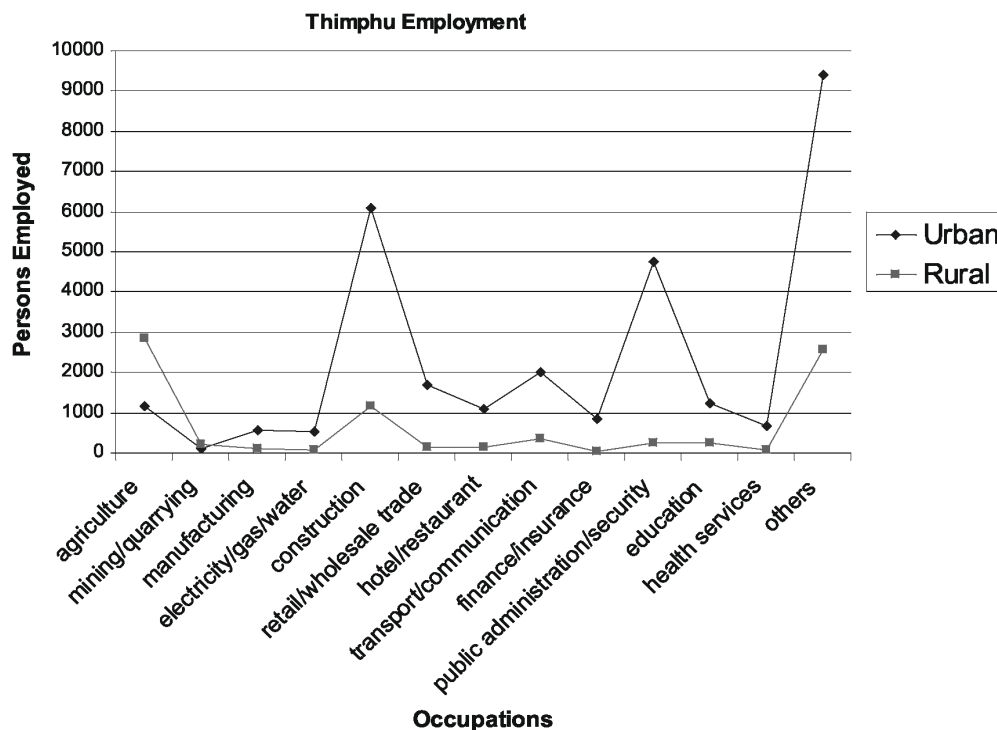


Fig. 8. Employment in Thimphu urban and rural districts.

Despite the lack of suitable jobs such as in manufacturing, Thimphu remains the most popular destination for young migrants. The extended family social network often provides the first stop housing for unemployed or low paid youth when they come to the big city of Thimphu. This social safety net takes a burden off the

government in terms of supplying low end housing and possibly holds down delinquent behavior of those within the purview of relatives' care. Moving from one relative to the next further distributes the burden in a society with large families, shifting boarding locations until the new member finds employment sufficient to support separate living quarters. As indicated in Fig. 7, male migrants exceeded female migrants only in the most recent time period during the latest construction boom. Longer term migrants are more likely to be female, dissimilar to the usual developing world pattern but indicating the importance of the family unit in Bhutan as well as concentration of education opportunities in the city.

National Technical Training Institutes and centers for training youth in the traditional “thirteen crafts” (weaving, painting, metal working, slate carving, etc.) attempt to transition a new workforce, particularly where they congregate in the largest city. Skilled tradesmen for niche occupations such as plumbers, carpenters, and electricians are starting to be produced with skills beyond the usual self-sufficient farmer's needs. However, the lingering strong Bhutanese preference for a secure government desk job leaves many low skill but less desirable occupations from construction to domestic attendants to be filled by (occasionally illegal) Nepalese and Indian migrants.

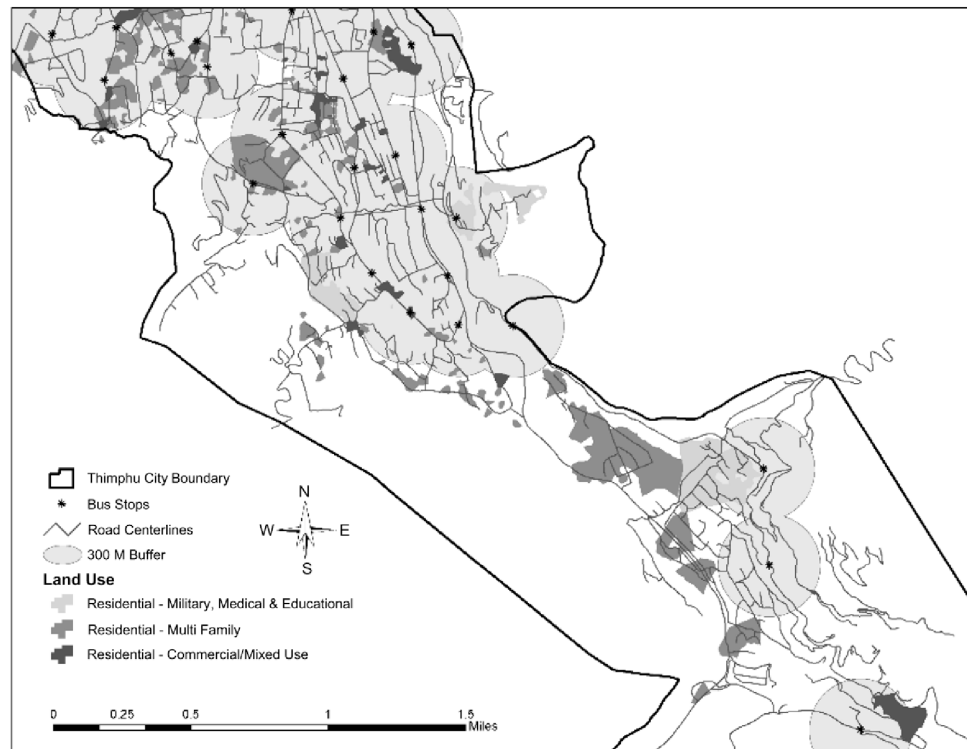


Fig. 9. Bus stops with walking distance buffer zone centroids.

Housing

Another difference from the frequent segregation of low income occupants spatially observable in other countries arises from residence requirements in government subsidized multi-unit dwellings. One spouse may qualify due to a low paying job, but the other spouse may earn more than minimum, permitting the couple to economize on housing and at the same time save for an expensive purchase such as a car. Traditional single family homes are often occupied by several generations whose incomes range from subsistence to affluent, with the other relatives providing unremunerated child care for working two-career couples.

Inexpensive public buses frequent main routes and housing concentrations, out-competing taxis and motorcycles as a preference until the desired commute vehicle can be purchased. The weekend market across the river from the downtown concentration – main shopping location for produce for the entire city – is accessible by bus and private vehicles. Fig. 9 combines the location of three major housing types (excepting single family residences whose occupants are most likely to use a private vehicle) with bus stop locations as an accessibility proxy. Areas with bus stops away from residential concentrations denote commercial destinations. The issue represented constitutes a key underlying consideration as to who can reach what employment

opportunities. The distance chosen for the buffer indicates a comfortable walk for someone carrying a burden. Bus services are currently managed by the postal service. Despite a number of gaily colored school buses, long lines of children walking to schools at all levels (as shown by the different patterns in their school uniforms from elementary to middle and upper level) is a common daily occurrence. The few traffic jams that clog Thimphu's main street are precipitated by the beginning and end of the school day at the best high schools when more affluent parents arrive to drop off and pick up their offspring. Traffic patrolmen manage the busiest intersection in the heart of the central business district (CBD) from a traditionally decorated box in the middle of the roadway (Fig. 10).



Fig. 10. Traffic control, center of CBD, Thimphu.

Categories counted by the Census for Thimphu are shown in Table 1, revealing a number of interesting standard of living divisions. Since Thimphu's boundaries include several traditional villages and the rural areas between them – typical of over-bounded Asian cities – the population within city limits includes residents of den-ser, urban concentrations and more rural residents. Slightly more houses benefit from piped in water than are without. As expected, literacy rates are higher for males than for females, but the gap is not great. Rural residents of Thimphu are more likely than urban residents to own land and a house, but urban residents lead substantially over rural in terms of household conveniences, except radios. Both benefit from city services such as electricity, however, indicating an attempt to equalize the basics.

Table 1
Thimphu standard of living, 2005.

| | |
|--|--------------|
| <i>Main household water source</i> | |
| Piped within house | 8539 (54%) |
| Piped outside house | 6986 (44%) |
| <i>Literacy</i> | |
| Males | 31,012 (82%) |
| Females | 21,559 (67%) |
| <i>% of Respondents (urban/rural) who own</i> | |
| Land | 41/52 |
| House | 30/45.7 |
| Vehicle | 30/11.7 |
| Refrigerator | 38/14.3 |
| Washing machine | 15/2.3 |
| Radio | 79/69 |
| TV | 68/28 |
| Telephone | 46/22.6 |
| Mobile phone | 42/13 |
| Computer | 11/1.5 |
| <i>Main source of lighting (15,728 population)</i> | |
| Electricity | 15,556 |
| Kerosene | 108 |
| Firewood | 9 |
| Candle | 28 |

Source: Census of Bhutan, 2007.

Boundary expansion and growth limits

The “Bhutan National Urbanization Strategy” (IPE, 2006) noted that the two most important issues to deal with involved “*very rapid rates of urbanization and limited availability of serviced land*” (p. 9, italics in the original). Thimphu’s estimated growth rate of 2.6% in the period 2000–2005 led the nation. The city’s rapid growth was without question, but the rate of change must remain indefinite since the only reliable figures come from the national census taken in April 2005. Shortages of water, proper sanitation, and waste disposal (the single facility built with a Danish grant several years ago is at capacity) characterize the strain on municipal service delivery and infrastructure insufficiency.

Thimphu’s urban planning continues with assistance from neighbor India, ever concerned to create a strong buffer against China on Bhutan’s northern border. Foreign consultants such as the authors of the *Bhutan National Urbanization Strategy and Thimphu City Development Strategy* (2006) and the *Thimphu Structural Plan 2002–2027* (MoWHS, 2005) also offer expensive advice. Grants from developed world financial institutions such as the Asian Development Bank, the United Nations Human Development Program, European and Japanese sources fund national urban projects. Constituted in 1995, the Thimphu City Corporation bears primary responsibility for providing “planned growth of Thimphu City andeffective services to the residents” (TCC, 2006). They are also tasked with privatizing the delivery of public services including water, solid waste, sewerage and parking.

A land “pooling” process key to implementing urban planning recommendations in the Thimphu Structural Plan (TSP) causes some turmoil due to its required transformation in land ownership. Under this plan, carried out by the Thimphu Municipal Corporation (the city government) and enforced by the courts, registered owners of tracts in areas targeted for pooling must relinquish up to one third of their parcel(s). The “market” rate sales price determined by the government accompanies the offer of land somewhere else to replace the piece pooled. Areas subsequently acquired in the pool are earmarked by the TSP for a variety of uses according to the minutely detailed Local Area Plan for each of the 16 city districts. Paddy land is protected as important for the food supply as well as the riparian environment, but dry land remains vulnerable to allocation in order to widen roads or provide areas to develop into nodal centers for new retail, education, or other concentrated activities. Exact uses remain unclear to the public, though planning documents advocated distribution of informational brochures explaining the benefits of this “people friendly” (MoWHS, 2006, p. 72) program. Immediate construction of roads is often advised, in order to create a permanent reality on the ground less subject to adjudication or reversion to its original status. Construction of homes high on the hillsides surrounding the city, in areas steep enough to precipitate erosion, occurs outside city boundaries on county (*dzongkag*) controlled land. Parties empowered to permit land use in these areas are reportedly more amenable to persuasion for the granting of exceptions than are national and municipal authorities.

A close-up view of structures in Thimphu’s city core district, classified by type of use, utilizes building footprints from a QuickBird image at .6 meter resolution (Fig. 11). Commercial use buildings line Thimphu’s two main streets of Norzim Lam (North Street) and Chang Lam (South Street). The commercial cluster in the northeast is the market. Residential structures predominate, with the exception of the one main hospital, a string of hotels in a two block commercial area close to the central square, and the Tashichodzong to the north, close to a cluster of government buildings. Another government cluster is next to the main post office. The main industrial cluster is a group of auto repair facilities that are being relocated to the south of the city core, just north of a traditional (recently incorporated) village.

Urban future plans

The *Thimphu Structural Plan* (TSP) provides the latest blueprint for growth, attempting to combine Eurocentric models with native sensibilities. Enshrined within the TSP Western planning principles lay key urban roles for traditional political-religious sites. Overseen by an American planning consultant now an expatriate in India, it incorporates notions that the authors’ term “Intelligent Urbanism” (Benninger, 2002), very similar to what is known in the US as “Smart Growth” plans (Downs, 2005; Scott, 2007). Popular with “new urbanists”, ideas include advocating clustered, densely occupied village-type nodal neighborhoods within the larger city,

connected by public transportation, all designed to minimize vehicular use. “Urban villages” form the key organizing concept for a reconfigured capital city with “back to the future” designs promoting pedestrian-friendly accessibility to combat reliance on motor vehicles.

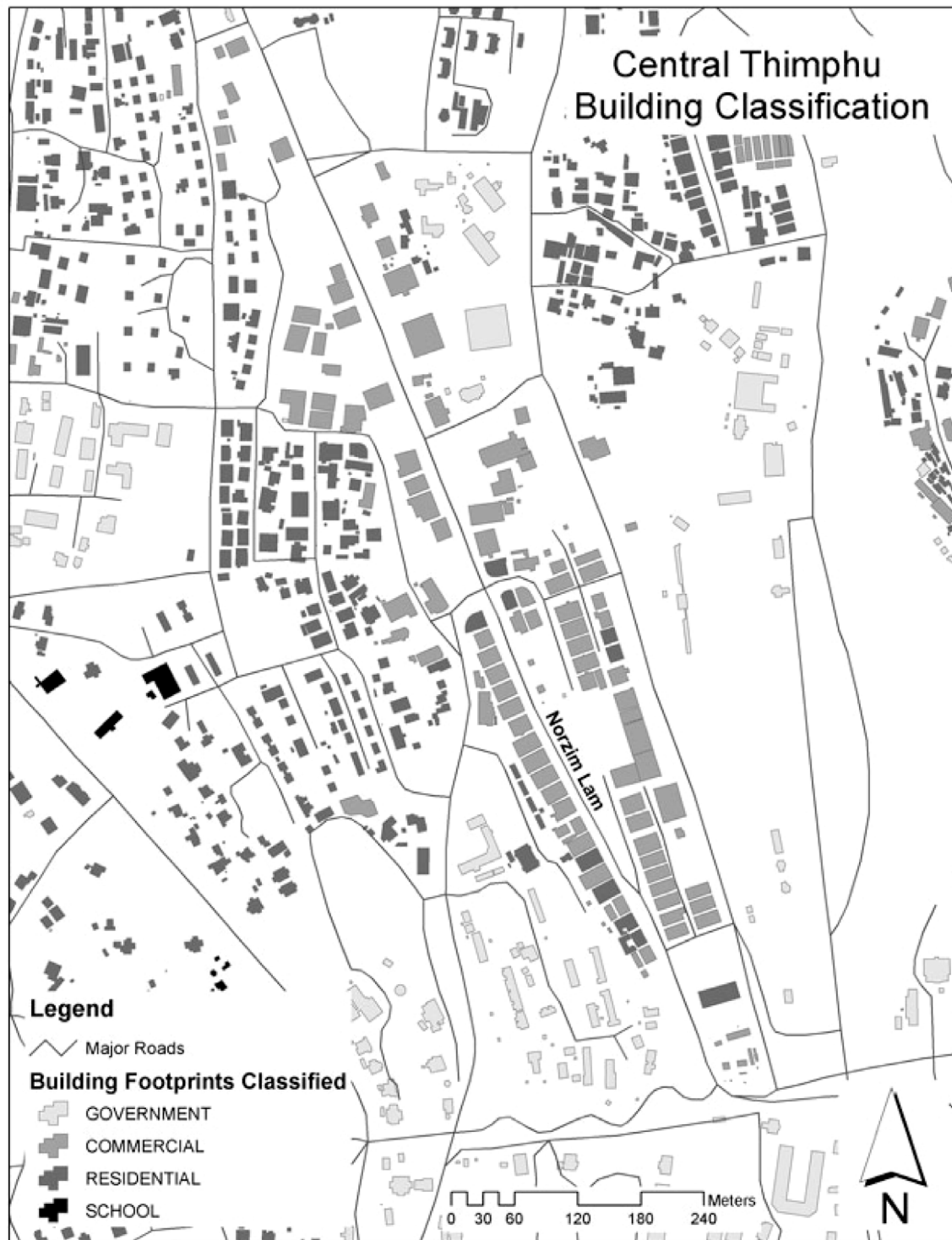


Fig. 11. Building footprint classification.

Neighborhood Nodes function as the basic organizing unit for the new town envisioned in the Thimphu Structural Plan. Spatially proximate housing, retail and transportation are seen as supporting a more integrated and less vehicle dependent life style. Such configurations would also simplify provision of infrastructure services by extending arteries to each node, with short links to consumers for water, sewage, electricity, and similar public services. Nodes of integrated clusters would fill in settlement between older villages within Thimphu, countervailing the usual tendency for sprawl outside municipal boundaries. Urban Hub clusters of twice the size of more interior Urban Villages are envisioned for the far north and south extent of Thimphu.

Neighborhood Nodes of smaller scale, semi-autonomous units, would fit spatially within both of the larger organizing units (MoWHS, 2005). These modern plans are designed to continue the largely self-sustainable character of the older agricultural-based villages. They aim to discourage migration inward by keeping each spatially dispersed but transportation linked sector as a stand-alone, equally well-provisioned unit – thus requiring land pooling to reallocate spatial functions.

Conclusion

Thimphu displays the earmarks of a capital city in a country recently embarked on major transitions. Signs of its nascent status and singular setting include the lack of traffic signals and parking lots. The absence of shanty towns also says something about the communal, controlled, socially networked nature of the country. Distinctions from common urbanization trends include plans to concentrate settlement into village-like clusters, preservation of traditional building styles and religious memorials, low tolerance for unregulated structures, and provisions for public activity spaces.

Thimphu's over all calm, so uncharacteristic of Asian capital cities, demonstrates the relatively homogeneous nature of the population as well as its early stage of development and urbanization. The greatest disturbance of the peace comes at night with the cacophony of stray dogs tolerated by the Buddhist population reluctant to do more than neuter and/or relocate them. Relatively few people can afford cars, and the general low population density holds down concentration pressure. Scarcity of jobs not linked to high education attainment discourages migration from rural areas. Foreign temporary workers fill low skill labor slots in construction that Bhutanese disdain, and manufacturing is an insignificant part of the current economy.

Whether this societal calm will weather the multiple transitions underway to parliamentary governance and openings to economic entrepreneurship along with foreign investment remains to be seen. Planners recognize that unemployed male youth pose an urban problem, and technical training schools are beginning to appear to address the issue. Bhutan sits in the midst of a dangerous neighborhood with giants flexing their muscles. Its commitment to a 'Middle Way' balance of past cultural traditions along with modernizing technology, attempting to raise the people's standard of living while avoiding materialist grasping at acquisitions, underlines the importance of continuing to monitor the fate of this small but strategically important place.

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